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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/864,817	05/24/2001	Stephen A. Constantino	97046CIPDIV (C0698/7138)	3443

7590 12/02/2002

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EXAMINER	
BLANTON, REBECCA A	
ART UNIT	PAPER NUMBER
1762	14

DATE MAILED: 12/02/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

AS-14

Office Action Summary	Application No.	Applicant(s)	
	09/864,817	CONSTANTINO ET AL.	
	Examiner	Art Unit	
	Rebecca A. Blanton	1762	

-- The MAILING DATE of this communication appears on the cover sh et with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 September 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claim1-6 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lilley et al. (U.S. 4,764,493).

Regarding claims 1-4, and 9-10, Lilley et al. disclose a process for forming barium titanate particles by reacting barium hydroxide with titanium dioxide at a temperature of at least 100°C (abstract). The reference teaches that the solvent used in the above reaction is water, isopropyl alcohol or n-butanol (column 3 lines 26-30). Lilley et al. teach that the preferred reaction temperature for forming the barium titanate particles is 100° -125°C (column 3 lines 35-36). Lilley et al. additionally teach that the barium titanate particles may be coated with niobium oxide by mixing the particles with isopropyl alcohol and niobium ethoxide (column 6 lines 25-31). Lilley et al. does not

specifically teach maintaining the barium titanate particles in a wet-environment following the hydrothermal reaction, however, the solvent system for the hydrothermal reaction is the same as that for the surface coating reaction. Mixing the barium titanate particles in isopropyl alcohol directly with the niobium ethoxide reactant eliminates the drying step, thereby saving time and money. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the barium titanate particles by hydrothermally reacting barium hydroxide with titanium dioxide in isopropyl alcohol, wherein the barium titanate particles formed by the reaction are then mixed with niobium ethoxide and isopropyl alcohol to form a niobium oxide coating on the surface of the barium titanate particles, as disclosed by Lilley et al., wherein the mixing of the barium titanate particles directly with the niobium ethoxide coating solution eliminates the drying step, thereby saving time.

Regarding claims 5-6, Lilley et al. discloses the step of washing the barium titanate particles after they have been formed in the hydrothermal reaction, so as to remove excess barium hydroxide (column 4 lines 48-57). Lilley et al. teach that the particles are washed by two washings with water followed by an additional wash with isopropyl alcohol when the particles are to be used in isopropyl alcohol for further treatment (column 4 lines 48-57). The reference teaches that the wash fluid is removed from the particles, so as to remove the excess barium hydroxide (column 4 lines 48-57 and column 7 lines 1-5).

Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lilley et al. (U.S. 4,764,493) as applied to claim 1 above, and further in view of Funk (U.S. 5,833,361).

Lilley et al. discloses a process for hydrothermally producing barium titanate particles, as described above. However, the reference does not teach using a high-shear mixer for deagglomerating the barium titanate particles. Funk teaches a high shear mixer that is used for deagglomerating ceramic particles, such as barium-titanate (column 1 lines 19-21, 28-30, and 44-45). Funk further discloses that most ceramic powders are severely agglomerated, and therefore must be subjected to deagglomeration through high shear mixing (column 1 lines 19-21, 44-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to deagglomerate the barium-titanate particles taught by Lilley et al. after their formation using the high shear mixer taught by Funk so as to ensure that the barium titanate particles are deagglomerated prior to the coating process.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rebecca A. Blanton whose telephone number is 703-605-4295. The examiner can normally be reached on M - F (7:30am - 3:30pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P. Beck can be reached on 703-308-2333. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

rab
November 26, 2002

SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700